# CMMS Technical Framework Update

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**Presented by**

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# *CMMS Technical Framework*
## Version 0.1.6 Status

- **Written comments from JSIMS and DIA**

- **WarSim and NASM input via DRC, S3I, and IMC**

- **Informal comments from STOW and MariSim**

- **Basis for DMSO Data Engineering Technical Framework**

- **Input to DMSO sponsored MSRR**

# *CMMS Technical Framework Development and Approval Process*

**Prototype Version (0.2)**

- **Formal internal approval within DMSO**
- **Informal external coordination via CMMS TWG**
- **Written specification for CMMS Prototype Cycle 2**

**First Production Version (1.0)**

- **Formal DMSO promulgation**
- **Formal coordination/sign-off of flagship M&S programs**
- **Written specification for production CMMS**

# *Strawman Development Taxonomy*

| Type | Designator (type.ver.rev) | CMMS Example | HLA Example | Data Engr. Example |
|---|---|---|---|---|
| Experiment | N/A | Experiments | | CENTCOM CFDB |
| Prototype | 0.ver.rev | Prototype | DARPA BAA | OB-DIF |
| Production | 1.ver.rev | | Proto-Fed's | UTSS C&P DIF |
| M&S Std | 2.ver.rev | | Baseline Description | |
| External Std | 3.ver.rev | | | DISA Proposal Packages |

# CMMS Technical Framework
## Version 0.2 Plan

**Adopt C4ISR Architecture Framework**

- **CMMS/DE Process** ➔ **Operational Architecture**
- **DE Products** ➔ **Technical Architecture**
- **MSRR Integration** ➔ **Systems Architecture**

**Update CMMS TF to incorporate Data Engr TF**

- **Separate** *Manage* **into** *Requirements* **and** *Repository*
- **Add** *Specify, Endorse, Design, Catalog, Configure, Store, Purge, Employ, Verify, Validate, Certify/Accredit*
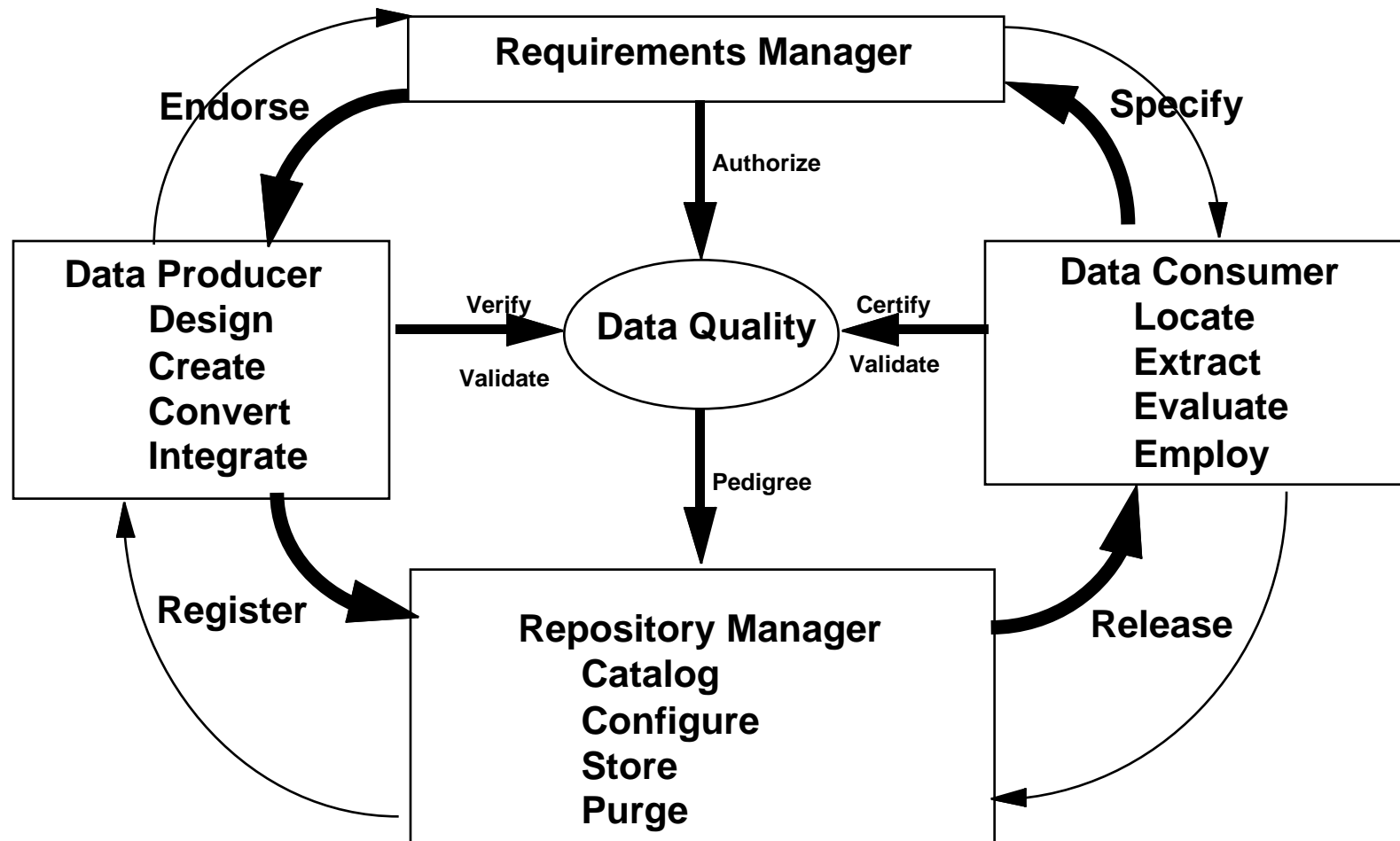
**Next Level of Detail on Key Concepts**

- *Create*: **incorporate NASM and JSIMS comments into EATI and provide detailed use-case examples**
- *Register* **and** *Release*: **two-signature business CM rules with forward/backward traceability**
- *Authoriative Data Source* **and** *Authorized Data Consumer* **Data Interchange Formats (DIF)**
- **EATI common syntax and semantics are key to** *Convert* **and** *Integrate*

# Data Engineering Process, Version 0.1.3 (Operational Architecture)

**DMSO**

**Requirements Manager**

Endorse

Specify

Authorize

**Data Producer**
Design
Create
Convert
Integrate

Verify

**Data Quality**

Certify

Validate

Validate

**Data Consumer**
Locate
Extract
Evaluate
Employ

Register

Pedigree

Release

**Repository Manager**
Catalog
Configure
Store
Purge

→ Primary Drivers  (Deliver, Propose, Lead)

→ Secondary Feedback (Request, Review, Concur)

# *Supporting Data Products (Technical Architecture)*

**Data Interchange Formats (DIF)**

- **Content      (Common Semantics)**
- **Structure    (Common Syntax)**
- **Interfaces   (Tools/Utilities)**

**Authoritative Data Sources (ADS)**

- **Producer Identification**
- **ADS Data Interchange Format**

**Data Quality (DQ)**

- **Availability, Accuracy, Timeliness, Integrity**
- **VV&A/C Procedures**
- **Tools/Utilities**

**Data Security (DS)**

- **Consumer Identification**
- **ADC Data Interchange Format**
- **Data Protection**
- **Data Release**

# *Prototype Functional Specification: Role Assignments*

**Model (Data)** *Consumer*

- DRC/S3I will role-play *Consumer* in Cycle 1
- JSIMS/JWARS/etc. developers with be *Consumer* in Cycle 2

*Reguirements Manager*

- DMSO in Cycle 1
- DMSO with CMMS TWG input in Cycle 2

**Model (Data)** *Producer*

- Existing conceptual models primarily from NASM and WarSim but some input from JSIMS, JWARS, and STOW.
- Physical delivery of tape/disk in Cycle 1
- MSRR *Register* in Cycle 2

*Repository Manager*

- DRC in Cycle 1
- MSRR distribution in Cycle 2

*Specify*

- **Joint Interdiction for Cycle 1**
- **Joint Deployment for Cycle 2**
- **Korean scenario for concrete instance data**

*Endorse*

- **DMSO approval/sign-off on functional specification**

*Create*

- **Single thread of available models**
- **Separate DMSO common syntax/semantics project**

*Register*

- **MSRR and DIF not ready for Cycle 1**
- **ADS data elements from DDDS**
- **Data segments from GCCS Common Data Server (CDS) Development Integration Standard (DIS)**

*Convert*

- **NASM/WarSim in RDD-100 format**
- **JSIMS in Rational Rose (Booch) format**
- **JWARS in StateMate format**
- **STOW-97 in IDEF0 BPwin format**

*Integrate*

- **Map to Entities, Actions, Tasks, and Interactions**
- **UJTL for Joint tasks**
- **Service METL's**
- **Warfighter/Physical levels TBD**

*Release*

- **MSRR and DIF not ready**
- **ADC data elements from DDDS**
- **Data segments from GCCS-CDS-DIS**

## *Prototype Functional Specification*
## *Activity Demonstrations (3 of 3)*

*Locate*

- **Direct extensions of CMMS experiment GUI's and queries**

*Extract*

- **HTML/Java file transfer**

*Evaulate*

- **VV&A/C Guidelines Test Case**

*Employ*

- **DRC/S3I demo in Cycle 1**
- **Actual JSIMS/JWARS developers in Cycle 2**